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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

LE, JOHN H

ART UNIT

PAPER NUMBER

2863

DATE MAILED: 07/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n No.

09/943,633

Applicant(s)

WAGONER, EARL VAN

Examiner

John H Le

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-- The MAILING DATE of this c mmunication appears on the cover sh et with the correspondenc address --

Peri d f r Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10 and 11 is/are allowed.
- 6) ☒ Claim(s) 1-9 and 12-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. This office action is in response to applicant's amendment received on 06/20/2003.

Claims 1, 2, 10, and 11 have been amended.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over FitzGerald (USP 5,382,958) in view of Sagey et al. (USP 4,740,792).

Regarding claims 1, FitzGerald teaches a process for determining an impact location of a transmitter bearing object within a geographical area containing a target (Fig.1), wherein the process comprises the steps of providing at least three stations for receiving data contained in the signal transmitted from the object (e. g, Col.2, lines 36-68) and then transferring the data to a central processing station (e. g, Col.3, line 55-Col.4, line 21); and providing means at the central processing station to use the data in performing calculations to determine the impact location of the object (e. g, Col.4, lines 22- 51).

Regarding claim 3, FitzGerald teaches a process, wherein the transmitter-bearing object is military vehicle (e.g. Fig.1).

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Regarding claim 12, FitzGerald teaches a process wherein the impact locations of a plurality of transmitter-bearing objects can be determined (e.g. Col.2, lines 36-68).

FitzGerald fails to teach step of providing an object with a transmitter which upon activation transmits a unique signal, wherein the transmitter includes a non synchronized time/frame counter to indicate a length of time during which the signal is transmitted.

Sagey et al. teach step of providing an object with a transmitter which upon activation transmits a unique signal (e.g. Col.5, lines 59-65, Col.6, lines 17-20, Col.14, lines 61-68) wherein the transmitter includes a non synchronized time to indicate a length of time during which the signal is transmitted (e.g. Abstract, Col.2, lines 51-56, Col.9, lines 1-5, lines 21-25).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a transmitter which upon activation transmits a unique signal wherein the transmitter includes a non synchronized time to indicate a length of time during which the signal is transmitted as taught by Sagey et al. in the time transfer position location apparatus of FitzGerald for purpose of providing a vehicle locating system for remotely determining the locations of a comparatively large number of vehicles operating within a specific geographical region (Col.2, lines 59-62).

4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over FitzGerald (USP 5,382,958) in view of Sagey et al. (USP 4,740,792) as applied to claim1 above, and further in view of Sanderford et al. (USP 5,717,406).

Regarding claim 2, the combination of FitzGerald and Sagey et al. discussed supra, discloses the claimed invention except steps of determining the linear distances between the receiving stations and the central processing station, defining the spatial plane by a coordinate system to perform the calculations at the central processing station, whereby the spatial plane is correlated to the geographical plane of the target range by an algorithm; and determining correction factors which are used to adjust for signal delays in transferring data from the receiving stations to the central processing station, whereby the correction factors are based upon the differences in linear distances between the receiving stations and the central processing station.

Sanderford et al. teach the process comprises the steps of determining the linear distances between the receiving stations and the central processing station, defining the spatial plane by a coordinate system to perform the calculations at the central processing station, whereby the spatial plane is correlated to the geographical plane of the target range by an algorithm; and determining correction factors which are used to adjust for signal delays in transferring data from the receiving stations to the central processing station, whereby the correction factors are based upon the differences in linear distances between the receiving stations and the central processing station (e.g. Col.6, lines 43-Col.9, line 12).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the process steps as taught by Sanderford et al. in the time transfer position location apparatus of FitzGerald in view of Sagey et al. for

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purpose of providing intelligent averaging or weighting of previous position fixes in order to further enhance the accuracy of the most recent position fix (Col.2, lines 55-57).

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over FitzGerald (USP 5,382,958) in view of Sagey et al. (USP 4,740,792) as applied to claim1 above, and further in view of Morton (USP 6,318,667).

Regarding claim 4, the combination of FitzGerald and Sagey et al. discussed supra, discloses the claimed invention except the transmitter-bearing object is a bomb.

Morton teaches a process, wherein the transmitter-bearing object is a bomb (e.g. Col.5, lines 18-31).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the transmitter-bearing object is a bomb as taught by Morton in the time transfer position location apparatus of FitzGerald in view of Sagey et al. for purpose of providing a method to guide a bomb from a launch aircraft at a extended distance from the target by causing the bomb to glide to the target by wings or other lift surfaces on the bomb (Col.3, lines 55-58).

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over FitzGerald (USP 5,382,958) in view of Sagey et al. (USP 4,740,792) as applied to claim1 above, and further in view of Cargill (USP 5,432,546).

Regarding claim 5, the combination of FitzGerald and Sagey et al. discussed supra, discloses the claimed invention except the transmitter-bearing object is a practice bomb.

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Cargill teaches the transmitter-bearing object is a practice bomb (e.g. Col.4, lines 24).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the transmitter-bearing object is a practice bomb as taught by Cargill in the time transfer position location apparatus of FitzGerald in view of Sagey et al. for purpose of providing a military weapon system capable of providing timely and accurate video data that show the point-of-impact of a weapon (Col.2, lines 31-35).

7. Claims 6, 7, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over FitzGerald (USP 5,382,958) in view of Sagey et al. (USP 4,740,792) as applied to claim1 above, and further in view of Dupray (USP 6,249,252).

Regarding claim 6, the combination of FitzGerald and Sagey et al. discussed supra, discloses the claimed invention except the target is a physical or nonphysical thing.

Dupray teaches the process, wherein the target is a physical (e.g. Col.56, lines 42-56).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to inform the process, wherein the target is a physical as taught by Dupray in the time transfer position location apparatus of FitzGerald in view of Sagey et al. for purpose of providing a method and system for performing wireless mobile station location (Col.12, lines 40-44).

Regarding claims 7 and 8, the combination of FitzGerald and Sagey et al. discussed supra, discloses the claimed invention except the target is an enemy ship,

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munitions storehouse, personnel location; communications facility or a set of grid coordinates.

Dupray teaches the process, wherein the target is a set of grid coordinates (e.g. Col.70, lines 3-20).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to inform the process, wherein the target is a set of grid coordinates as taught by Dupray in the time transfer position location apparatus of FitzGerald in view of Sagey et al. for purpose of providing a method and system for performing wireless mobile station location (Col.12, lines 40-44).

8. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over FitzGerald (USP 5,382,958) in view of Sagey et al. (USP 4,740,792) as applied to claim1 above, and further in view of Ishikawa (USP 6,329,948).

Regarding claim 9, the combination of FitzGerald and Sagey et al. discussed supra, discloses the claimed invention except the receiving stations create a spatial plane, which does not include the target.

Ishikawa teaches the process, wherein the receiving stations create a spatial plane, which does not include the target (e.g. Col.56, lines 42-56).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to inform the process, wherein the target is a physical as taught by Dupray in the time transfer position location apparatus of FitzGerald in view of Sagey et al. for purpose of providing a method and system for performing wireless mobile station location (Col.12, lines 40-44).

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9. Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over FitzGerald (USP 5,382,958) in view of Sagey et al. (USP 4,740,792) as applied to claim1 above, and further in view of Marsh (USP 6,057,759).

Regarding claims 13-14, the combination of FitzGerald and Sagey et al. discussed supra, discloses the claimed invention except the signal ceases upon impact of the transmitter-bearing object, a process, wherein the signal continues after impact of the transmitter-bearing object, a process, wherein there is no impact of the transmitter-bearing object.

Marsh teaches a process, wherein the wherein the signal ceases upon impact of the transmitter-bearing object, a process, wherein the signal continues after impact of the transmitter-bearing object, a process, wherein there is no impact of the transmitter-bearing object (e.g. Col.7, lines 16-Col.8, line 40).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the process, wherein the wherein the signal ceases upon impact of the transmitter-bearing object, a process, wherein the signal continues after impact of the transmitter-bearing object, a process, wherein there is no impact of the transmitter-bearing object as taught by Marsh in the time transfer position location apparatus of FitzGerald in view of Sagey et al. for purpose of providing a system for detecting and locating overboard personnel of a vessel (Col.2, lines 31-52).

Allowable Subject Matter

10. Claims 10-11 are allowed.

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The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 10 and 11, none of the prior art of record teaches or suggests a process for determining an impact location of a transmitter bearing object within a geographical area containing a target, wherein the calculations performed at the central processing station are performed using the following mathematical formula:

$$\cos^{-1} \left(\frac{(x+t_2)^2 + (x+t_1)^2 - D_3^2}{2(x+t_2)(x+t_1)} \right) + \cos^{-1} \left(\frac{x^2 + (x+t_2)^2 - D_2^2}{2(x+t_2)x} \right) + \cos^{-1} \left(\frac{(x+t_1)^2 + x^2 - D_1^2}{2(x+t_1)x} \right) = 360$$

wherein x is the unknown amount of time required for the signal upon impact of the transmitter-bearing object to reach the closest receiving station, the receipt of the signal serving to activate the counters at each receiving station; t₁ is the amount of time in addition to x required for the signal upon impact of the transmitter-bearing object to reach the next closest receiving station; t₂ is the amount of time in addition to x required for the signal upon impact of the transmitter-bearing object to reach the farthest receiving station; D₁ is the distance between the first and second receiving stations; D₂ is the distance between the first and third receiving stations; and D₃ is the distance between the second and third receiving stations. It is these limitations as they are claimed in the combination, which have not been found, taught or suggested in the prior art of record, that make these claims allowable over the prior art.

Response to Arguments

11. Applicant's arguments filed 06/20/2003 have been fully considered but they are not persuasive.

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-Applicant argues that the prior art fails to teach or suggest: "a non-synchronized process".

Sagey et al. teach a non-synchronized process (Sagey et al., e.g. Abstract, Col.2, lines 51-56) as combination discussed above.

Conclusion

12. Specifically Sagey et al. has been added to second ground of rejection.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Le whose telephone number is (703) 605-4361.

The examiner can normally be reached on Monday to Friday from 9:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. John Barlow, can be reached at (703) 308-3126. The facsimile number for Technology Center 2800 is (703) 308-5841.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist of the Technology Center whose telephone number is (703) 308-0956.

John H. Le

Patent Examiner-Group 2863

July 14, 2003


John Barlow
Supervisory Patent Examiner
Technology Center 2800